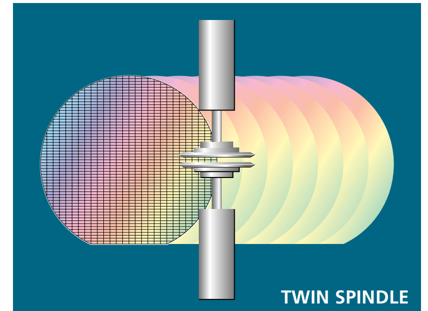
No.92-1035C

Wafer Dicing Machine

A-WD-300TX

Received the 10 BEST Awards for 5 years continuously (the first prize in the Assembly Equipment category)



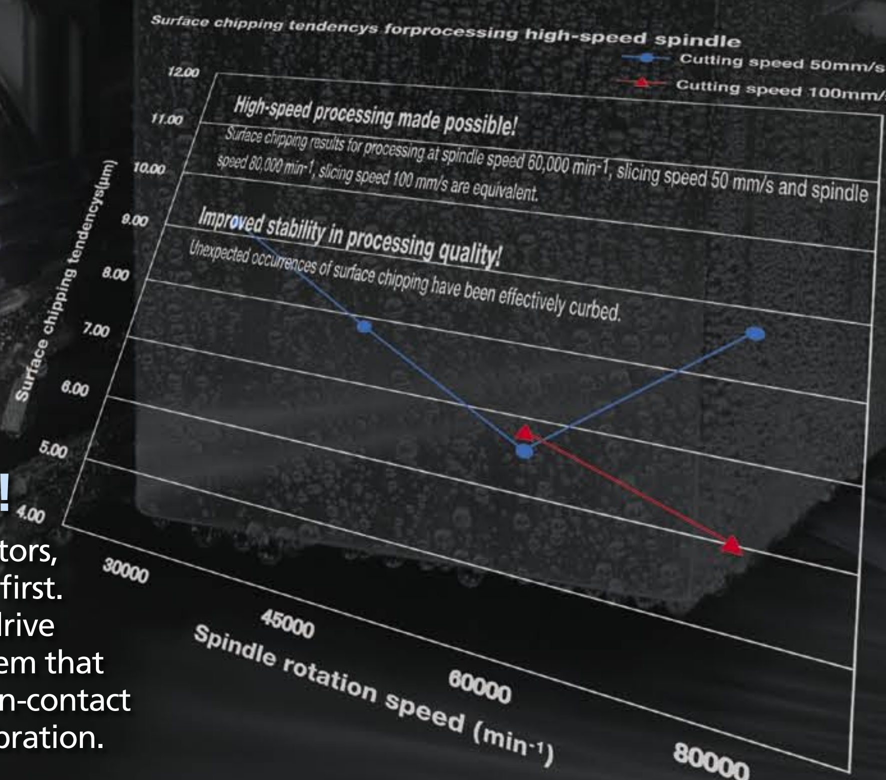
TOKYO SEIMITSU

Next-Generation High-Speed Wafer Dicing Machine.

A-WD-300TX

Spindle rotation speed of 80,000 min^{-1} made possible

The spindle axis comes standard equipped with a newly developed 80,000 min^{-1} high speed spindle, a result of Tokyo Seimitsu's accumulated expertise in processing technology.
Tokyo Seimitsu is opening up a new domain in processing, with previously unattainable high-speed dicing and high processing quality.
(Patent pending)



X-axis travel speed of 1,000 mm per second attained. Industry first!

Through pursuing ever increasing speed for X-axis linear motors, we have achieved a travel speed of 1,000 mm /s, an industry first. Increased high speed throughput has been achieved In the drive section, Tokyo Seimitsu uses a well-established air guide system that in combination with the linear motor forms a completely non-contact mechanism offering high processing quality with reduced vibration.

17-inch touch screen panel monitor employed

The monitor used has progressed forward to a touch panel system enabling intuitive operation. Visibility and operability have been improved with a larger operation display.

Automation of software

We offer GUI (Graphic User Interface) based operations, emphasizing automation and simplification. The complicated procedures and settings required by operators in conventional models have been done away with as much as possible, and the device itself makes judgments and actively assists with operations.
Improved error recovery functions and reduction in operation times have been made possible.

One microscope and optical cutter set unit per spindle

One high magnification microscope and optical cutter set unit is provided for each of the Z1 and Z2 spindles, shortening the time required for alignment, kerf checking and setting up, as well as increasing speed.
To prevent contaminant deposits, a mechanical cover has been provided for the microscope and optical cutter set unit.

Standard adoption of a pitch between blades of 25 mm

For small chip devices, high productivity can be maintained by reducing the pitch between blades. By reducing the pitch between blades from the conventional figure of 34 mm to 25 mm, superior productivity is demonstrated with standard specifications.

Superior maintainability

An optimal device layout simplifies front and rear access, significantly improving maintainability.

USB interface adopted

A USB interface has been adopted enabling effective upgrading and storage of device data.

Cleaning time reduced by half with the triple air accelerated cleaning head. Industry first!

By reducing cleaning time to half that of conventional systems, transfer section waiting time has been greatly decreased.
The excellent cleaning results produced by the triple air accelerated cleaning head are particularly effective in eliminating contaminant deposits after slicing.
(Patent pending)

Contamination reduced with the water cleaning unit. Industry first!

Contaminant deposits created during dicing have been reduced with the water cleaning unit, equipped as standard.
(Patent pending)

Wafer does not drop even if air is cut-off . Industry first!

With the wafer protection system equipped in the transfer arm, even if air is cut-off, the wafer is prevented from dropping.
An adjustable speed stepping motor is used in the wafer contact section. Through use of this system stress placed on thin wafers and small chip wafers vulnerable to impact when detaching has been reduced, making highly reliable and stable transferring possible. (Patent pending)

RED-LED lighting, new model microscope adopted

Through use of RED-LED lighting and a new model microscope, wafer contrast and resolution as seen on the monitor have been significantly improved.

A-WD-300TX Specifications

Wafer size		Max. ø 310 mm
Usable frame size		8", 12"
Spindle 1, 2	Rated output	1,200 kW
	Maximum speed	80,000 min^{-1}
Static dicing accuracy		0.004 mm
X axis	Feed rate range	0.1 - 1,000 mm/s
Y 1, 2 axis	Accuracy	0.002 mm / 310 mm
	Control resolution	0.0001 mm
	Slicing range	310 mm
Z 1, 2 axis	Accuracy	0.003 mm / 1mm
	Stroke resolution	0.0002 mm
	Repeatability precision	0.0015 mm
	Blade diameter	Max. ø 60 mm
θ axis	Control resolution	0.3 arc-s
	Rotation angle	Max. 720 deg
Power supply		AC 200 - 220 V, 3 phase, 50/60 Hz *Multiple power supply types supported with optional transformer
Air supply	Source pressure	0.5 - 0.7 Mpa
	Consumption	Average 250 ℓ /min *Excludes air blow
Nitrogen	Source pressure	0.5 - 0.7 Mpa
	Consumption	Average 100 ℓ /min
DI water for cutting	Source pressure	0.4 - 0.5 Mpa
	Consumption	Max. 12 ℓ /min
DI water for cleaning	Source pressure	0.4 - 0.5 Mpa
	Consumption	Max. 4 ℓ /min
Spindle coolant	Source pressure	0.2 - 0.5 Mpa
	Consumption	3 ℓ /min (Municipal water possible)
Dimensions		$1,650^{W} \times 1,420^{D} \times 1,800^{H}$ mm *Excludes protruding parts
Weight		1,800 kg

Main Options

- Built-in UV curing unit
- Booster pump unit
- Forced exhaust fan
- Thermo regulator for Water
- Static eliminator
- Z-axis scale
- Adjustable light source color for microscope lighting
- 3-inch blade compliance
- Air accelerated cleaning unit for slicing section
- Melody alarm
- Barcode-based automatic device switching
- Utility cassette
- Frame vacuum clamp
- Production management system
- GEM networks communication
- Operation management system
- Multiple power supply compatible transformer
- Resistivity, temperature monitor

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Specifications and other descriptions may be changed for product improvement without any notice.

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